Dante Firmware Update Manager

User Guide

for Windows and Mac OS X

For Dante Firmware Update Manager software version: 1.4.5 and up

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1. Introduction

1.1. About Audinate

Audinate Pty Ltd is a leading developer of media networking technology whose products and solutions are transforming the way the world interconnects multimedia systems. Audinate's rapidly growing customer base spans the broader international AV industry and includes many key industry brands.

Audinate's hardware and software products and solutions are founded on patented technologies invented by its world-class networking experts. They enable manufacturers and AV system solution providers to produce sophisticated, easy to use, pro-audio quality AV solutions over standard IP networks.

Audinate is based in the United States and in Sydney, Australia.

Digital Media Networking Perfected

1.2. About Dante

Audinate's Dante technology provides high performance digital media networking that meets the quality and performance requirements of professional live sound, AV installations and broadcast and recording systems.

Designed to fully exploit the capabilities of today and tomorrow's networking equipment, Dante provides media transport mechanisms that eliminate many traditional audio network design restrictions. Dante makes it easy to set up robust, flexible digital audio networks with virtually unrestricted performance. A Dante network can be designed with mixed Gigabit and 100Mbps network speeds, simultaneously support audio with different sample rates and bit depths, and even allow the design of network zones with different latencies.

Dante is built on Internet Protocols — not just Ethernet. Because it uses standard IP over Ethernet, Dante is capable of running on inexpensive off-the-shelf computer networking hardware, and with the use of standard QoS can share installed networks with other data and computing traffic.

Dante provides sample-accurate synchronization and can deliver the very low latency required by professional audio. Dante's network-centric, audio-independent approach to synchronization allows perfectly synchronized playout across different audio channels, devices and networks, even over multiple switch hops.

Dante makes networking a true plug-and-play process, allowing automatic device discovery and system configuration. Dante-enabled devices will automatically setup their network configuration and advertise themselves and their channels on the network, reducing complicated, error-prone set-up procedures. Instead of "magic numbers", networked devices and their input and output signals can be named to make sense to the user.

Dante is not restricted to allowing configuration and transmission of audio channels. Dante also provides mechanisms to send or receive control and monitoring information across the Dante IP network, including equipment-specific messages and control specified and developed by a particular manufacturer.

With its strong foundations and links to current and evolving network standards, Dante is able to deliver a level of future proofing otherwise unavailable in other types of digital audio transportation. Dante was designed for Gigabit networks from its inception, and Dante as it exists today already incorporates aspects of the emerging AVB networking standards. Continued evolution of its networking technology is an integral part of the Dante roadmap.

Dante technology is available in ready-to-implement hardware and software products, reference designs and development APIs.

For more information, please visit the Audinate website at www.audinate.com.

2. Terminology

In this document, the term 'module' is used to refer to the Dante component of a host device - for example, a Brooklyn II module installed in a mixing console.

The term 'device' is used to refer to the host equipment in which the Dante module is installed.

3. About the Firmware Update Manager

The Dante Firmware Update Manager is a software application that allows you to:

- Select a firmware update file for a particular Dante module type
- Discover matching Dante-enabled audio devices on your network
- Manage the firmware upgrade for these devices
- Restore Dante-enabled modules in failsafe mode

Figure 1 - Start screen

3.1. About version 1.4.5

Version 1.4.5 of the Firmware Update Manager can be used to update the firmware for the following Dante modules:

- Brooklyn II
- Ultimo
- Dante PCIe Card

- Dante-MY16-AUD version 3.3.9 and up (for previous versions, see the Yamaha website)
- DLM version 3.3.6 and up (for previous versions, upgrade using the module web interface)

The Firmware Update Manager applies Dante firmware update files (file extension .dnt) to connected hardware devices. Update files may be provided by Audinate or by your device manufacturer.

4. Installing the Dante Firmware Update Manager

4.1. System Requirements

The Dante Firmware Update Manager can be installed on Windows PCs or Macs. Wherever practical, install it on the same computer as the Dante Controller so you can use both tools as required.

Note: If running Dante Controller on the same computer, please ensure you have updated to the latest version available from the Audinate website.

The Dante Firmware Update Manager can be installed on a computer running:

- Windows XP (SP3), 7 or 8
- Mac OS X 10.7.5, 10.8.5 or 10.9

4.2. What is included

The Dante Firmware Update Manager contains:

- Dante Firmware Update Manager installer file, including failsafe recovery image(s)

Note: Dante firmware update files are not included - they must be downloaded prior to using the Firmware Update Manager. See the *Prerequisites* section below for more information.

4.3. Windows Installation

4.3.1. To install

To install the Dante Firmware Update Manager:

1. Ensure you are logged on to your PC as an Administrator.
2. Double-click and extract the Windows installer file to a temporary location.
3. Close any running Dante applications, including Dante Controller and Dante Virtual Soundcard.
4. Temporarily disable any running antivirus software.
5. Double-click the installer file.
6. If prompted with a message:

   “The publisher could not be verified. Are you sure you want to run this software?”

   Select **Yes**.

You will be presented with the End User License Agreement.

7. Read and select the “I agree” checkbox if you agree to the terms. If you do not accept, the install will terminate.
8. Click **Install**

Wait until the Firmware Update Manager is installed.

9. If prompted with a message:

   “Do you want to allow the following program from an unknown publisher to make changes to this computer?”

   Select **Yes**.

10. The installation should now complete.

4.3.2. To uninstall

To uninstall the Dante Firmware Update Manager, either uninstall the program via the Control Panel (Start > Control Panel > Programs and Features), or:

1. Click **Start** and navigate to:

   All Programs > Audinate > Firmware Update Manager

2. Select **Uninstall**

   You will be given a chance to confirm. Select **Yes** to proceed.

The Dante Firmware Update Manager will be uninstalled.

Note: Uninstalling Firmware Update Manager will not affect Dante Controller or Dante Virtual Soundcard.

4.4. Mac OS X Installation

4.4.1. To install

To install the Dante Firmware Update Manager on Mac OS X:

1. Ensure you are logged on to your Mac as an admin user.
2. Download the Mac OS X “dmg” file.
3. Close any running Dante applications, including Dante Controller and Dante Virtual Soundcard.
4. Double-click the “.dmg” file to open it.
5. Double click on the installer “pkg” file to start the installer.
6. Read the terms and select the “I accept” checkbox if you agree to the terms. If you do not accept, the install will terminate.
7. Click **Install**.

You will be prompted to enter your password.

8. The installation will be completed when Firmware Update Manager is run for the first time.

4.4.2. To uninstall

Drag the application to the trash folder.

5. Using the Firmware Update Manager

5.1. Prerequisites

Dante firmware update files are not included with the Firmware Update Manager - they are provided separately by Audinate or your device manufacturer. Contact your device manufacturer if you are unsure where to obtain the latest firmware update file for your device.

Firmware update files must be saved to a local drive on the machine on which you have installed Dante Firmware Update Manager.

Note: Firmware Update Manager does not support multibyte characters in file paths to firmware update files. If your computer contains any directory names that include multibyte characters, save firmware update files to a location that contains only ASCII characters.

Warning: Applying the incorrect type of update file for your device will render the device unusable, and it will have to be restored to its original firmware version (see *Using Failsafe Recovery*). Always ensure the update file you apply is the correct file for your device.

5.2. Starting

To start the Dante Firmware Update Manager on Windows:

- Click the Windows **Start** button and navigate to:

  All Programs > Audinate > Dante Firmware Update Manager
- Select **Dante Firmware Update Manager**

To start the Dante Firmware Update Manager on Mac OSX:

- Open the Applications folder
- Open the 'Dante Firmware Update Manager' folder
- Double-click **Dante Firmware Update Manager**

Note: On Mac OS X, you will be required to enter an admin password to run Firmware Update Manager.

5.3. Quitting or exiting

To quit the application:

- Select **Quit** from the interface selection screen, or the mode selection screen
- Select **Back** until you reach the mode selection screen, then select **Quit**
- Select the standard **Close Window** icon in the corner of the window

Important: To avoid corrupting the firmware on your device, you should not quit the application if a firmware update is already in progress.

5.4. Selecting an interface

If you have multiple network interfaces enabled on your computer, when you first start Dante Firmware Update Manager you will be prompted to choose a Dante network interface for the upgrade (as shown below).

Select the interface used for the **primary** Dante network, then click **Next**.

If you have Dante Controller or Dante Virtual Soundcard installed, Firmware Update Manager will automatically preselect the primary interface that was last used by either of those applications.

If Dante Virtual Soundcard is running, you will not be able to change the primary interface in Firmware Update Manager, unless you first stop Dante Virtual Soundcard.

Note: If you do not have a secondary (redundant) network, the network interface will be automatically selected. Just click **Next** to continue.

5.5. Selecting a mode

The Firmware Update Manager has two modes of operation:

1. Update Dante Firmware
2. Failsafe Recovery

In most cases, you will require 'Update Dante Firmware' mode. This is the mode to use to update Dante modules with new firmware versions.

Failsafe Recovery mode is only required if a module has been corrupted and has entered failsafe mode. Failsafe mode and using failsafe recovery are described in separate sections later in this document.

6. About Dante Firmware

6.1. What is Dante Firmware?

All Dante hardware modules run Audinate firmware loaded onto the module.

From time to time Audinate makes firmware updates available on our website for different Dante modules.

These updates may:

- Add new features
- Improve performance
- Provide bug fixes

6.2. What does a Firmware Update file look like?

A firmware update file for a Dante module is a binary file containing a new firmware image for the module.

The filename is sometimes formatted as:

```
FWUpdate_<deviceName>_<version>.dnt
```

For example, the version 3.5.2.0 firmware update file for Brooklyn II modules is called:

```
FWUpdate_BrooklynII_3-5-2-0.dnt
```

6.3. When should I update my Dante Firmware?

It is good practice to update your firmware when a new release becomes available to take advantage of the latest improvements and bug fixes.

Firmware updates for your device will be distributed by the device manufacturer.

6.4. How do I know whether a particular Dante device needs updating?

By checking whether its product version is an earlier version than the available update.

You can use the Dante Controller **Device View > Status** tab to view the product version of Dante-enabled devices on your network.

To open the **Status** tab for a device, double-click the device in the Network view, then select the **Status** tab. The product version is shown in the **Device Information** pane, as shown below.

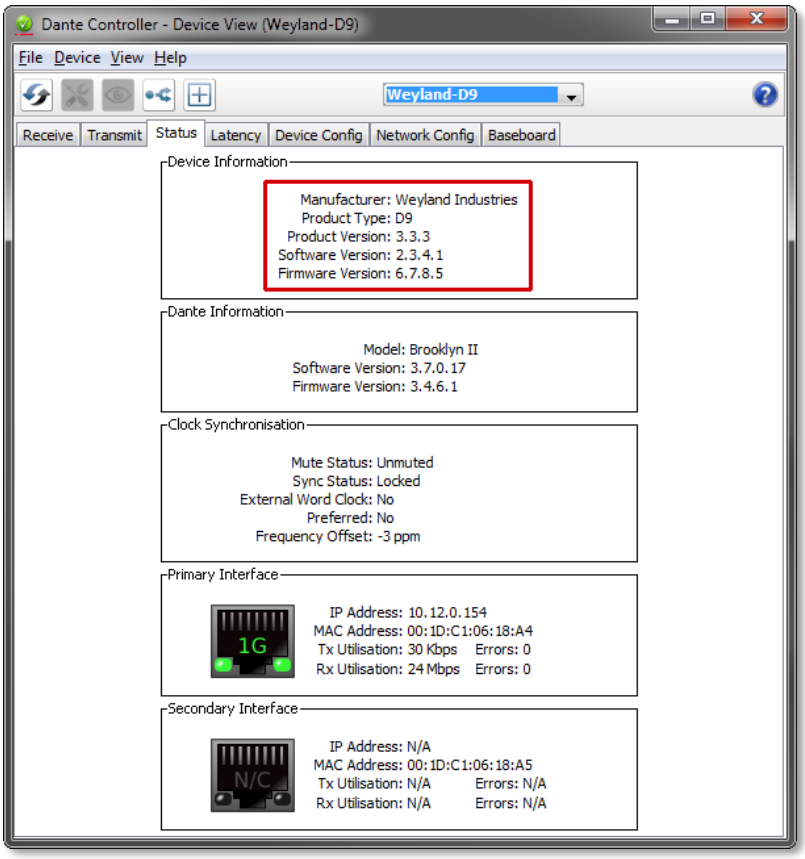


Figure 2 - Dante firmware information as shown in Dante Controller

The Firmware Update Manager also displays product version information for any discovered devices with a device type, manufacturer ID and model ID that match the update file you have selected.

7. Updating firmware

7.1. Prerequisites

Before starting the update process, ensure that:

1. All Dante devices that you wish to update are connected to the primary Dante network.
2. The computer on which you are running Firmware Update Manager is also connected to the primary Dante network, and Wi-Fi is disabled (for the duration of the updating process).
3. You have saved the appropriate firmware update file/s to a local drive.

> **Note**: Only run one instance of Firmware Update Manager at a time. Running multiple instances on a single machine is not supported.

7.2. Basic Steps

To update the firmware of a Dante module:

1. Open the Dante Firmware Update Manager.
2. If you see the interface selection screen (shown in section 5.4 - *Selecting an interface*), select the primary Dante network.
3. Select **Update Dante Firmware**.
4. Click **Browse**.
5. Browse to the directory in which you saved your firmware update files.
6. Select the required Dante firmware update file.

> **Note**: Do not select 'Override Device Matching'. This option should only be used if you have accidentally updated a module with the wrong firmware, or if you have been specifically instructed to do so by your device manufacturer (see the *Troubleshooting* section for more information).

The Firmware Update Manager will now scan for devices on the network that match the firmware update file, based on the module type, manufacturer and model.

7. View the discovered Dante devices, and select those you wish to update, by clicking the associated checkboxes, as shown below:

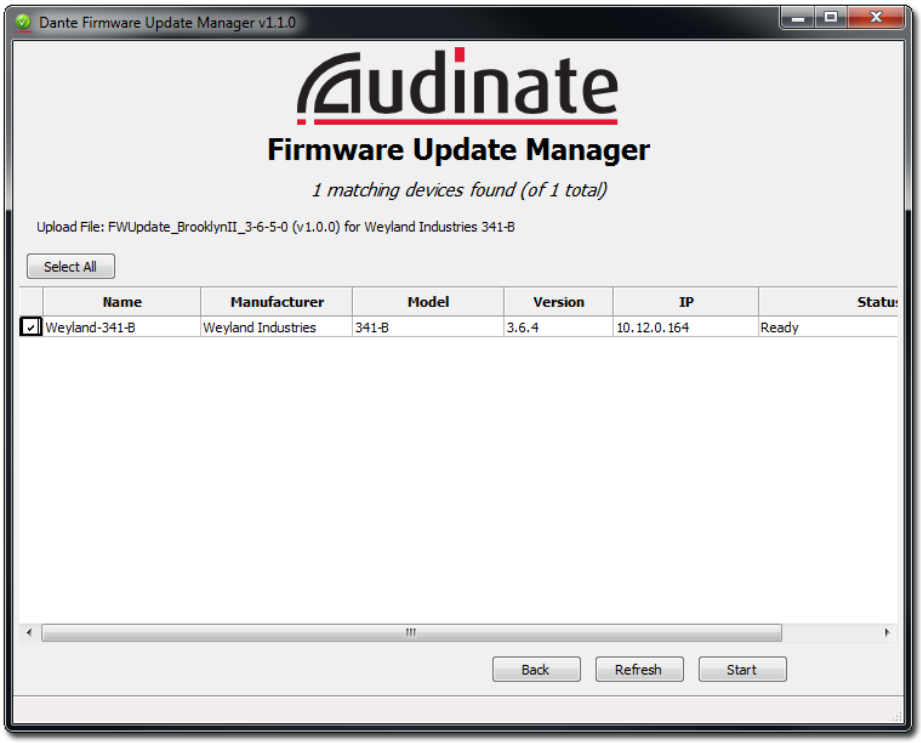


Figure 3 - Matching devices

If you are not sure where a particular device is located, you can use the **Identify** function in Dante Controller to help find it. Not all Dante-enabled devices have this function.

Information about the update file, including the file name and manufacturer and model information (where applicable) is displayed in the top pane for reference.

Click a column header to re-sort the device list.

The Firmware Update Manager may also display devices that are of the correct module type, but are configured with incomplete or missing manufacturer and model information. In this case, the Firmware Update Manager will warn you that updating the module may result in functionality problems. Proceed only if you are completely sure that you want to apply the selected update file.

Note: If the status field for a device indicates that the device must first be upgraded to an intermediate version, and the device is not selectable, it is because the device does not support a direct upgrade to the loaded firmware update file. Click **Back** and upgrade the device to the indicated version before continuing.

8. Select **Start**.

The Firmware Update Manager will start updating all selected devices.

Note: If Windows Firewall opens a new window asking you to confirm you allow the application to pass through the firewall, accept.

- Each device will be updated in turn, taking 2-4 minutes per device
- As each device is updated, the device Status column will change to 'Updating (n/m)'
- When all sections are updated for a device, the device will show 'Done'
- When all devices have been updated, the following message will be shown:

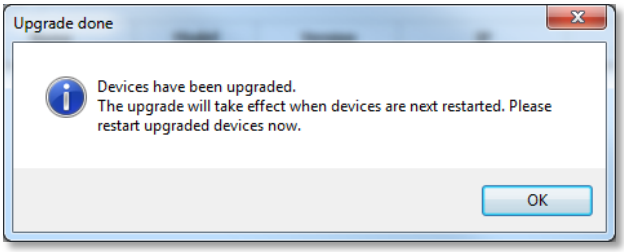

Upgrade done
Devices have been upgraded.
The upgrade will take effect when devices are next restarted. Please restart upgraded devices now.
OK

Figure 4 - Upgrade complete notification

9. Power cycle the Dante-enabled devices that have been upgraded, to finish applying the firmware update and restore your configuration. If the device is not power cycled or rebooted, the update will not be applied.

8. About Failsafe

8.1. What is failsafe mode?

All Dante hardware modules use software loaded from Flash memory as part of their operation.

As with any storage device, it is possible to corrupt the data on the Flash part, potentially rendering it unusable, if there are interruptions while writing to the Flash device.

By far the most common way for this to occur as with other Flash devices is by losing power to the Dante-enabled device in the middle of a firmware upgrade.

To provide recovery from this event, Dante hardware modules have a special protected part of the Flash memory that will run in the event the main part is corrupted.

When this is run, the module is in “failsafe mode”, and will wait for a recovery image to be provided by the Firmware Update Manager.

8.2. How do I tell if a device is in failsafe mode?

By viewing the device in the Dante Controller.

A Dante device that is in failsafe mode will appear with its default device name in **red** in the default network grid view of Dante Controller (versions 3.1.x and above).

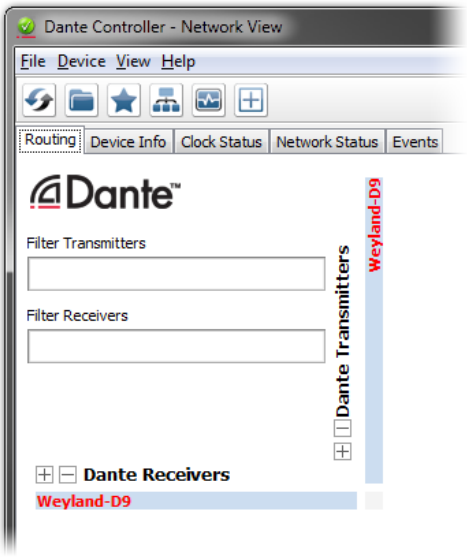


Figure 5 - Dante Controller showing device in failsafe mode

Also, for devices with LEDs, all status LEDs on the device will be red.

8.3. How do I recover from failsafe mode?

To restore a device that has entered failsafe mode, use the Dante Firmware Update Manager 'Failsafe Recovery' option.

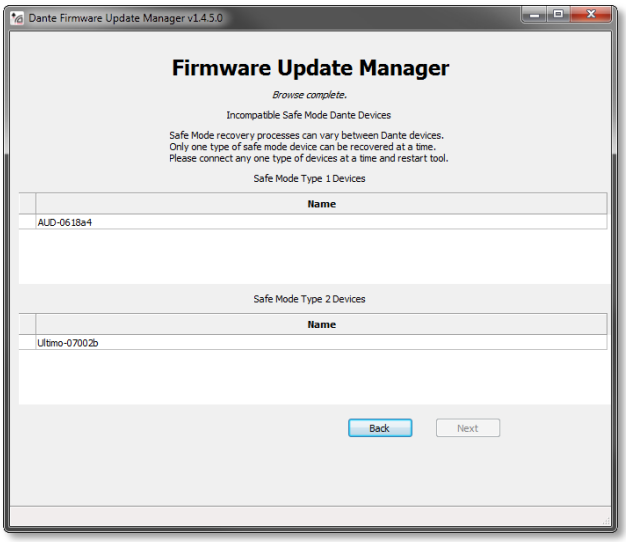
9. Using Failsafe Recovery

9.1. Basic Steps

To recover Dante devices in safe mode:

1. Disable all but one of the network interfaces on your computer.
2. Start Dante Firmware Update Manager.
3. If you see the interface selection screen (shown in section 5.4 - *Selecting an interface*), click **Next** to confirm the primary Dante network.
4. Select **Failsafe Recovery**.

   Firmware Update Manager will browse the network to find safe mode devices.
5. After a few seconds, one of four screens will be displayed:

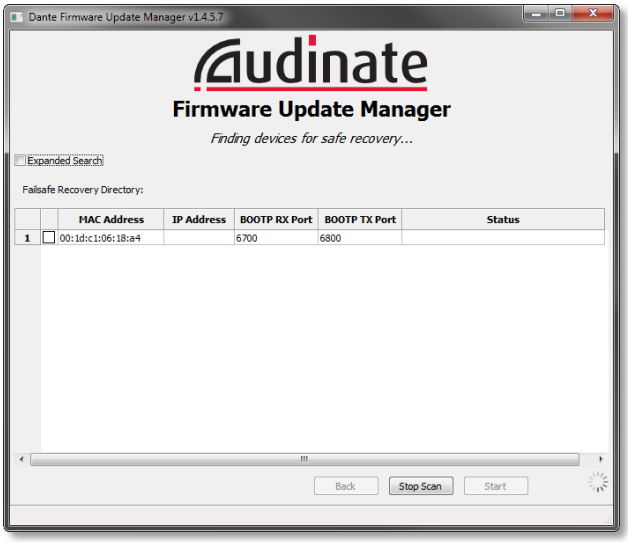

Dante Firmware Update Manager v1.4.5.0
Firmware Update Manager
Browse complete.
Incompatible Safe Mode Dante Devices
Safe Mode recovery processes can vary between Dante devices.
Only one type of safe mode device can be recovered at a time.
Please connect any one type of devices at a time and restart tool.
Safe Mode Type 1 Devices
Name
AUD-0618a4
Safe Mode Type 2 Devices
Name
Ultimo-07002b
Back
Next

Incompatible Safe Mode Devices

This screen indicates that you have two types of devices (for example, Brooklyn II devices and Ultimo devices) in safe mode on your network. Only one type of device can be recovered at a time.

Click **Back**, disconnect either the Type 1 devices or Type 2 devices (it doesn't matter which at this point), and click **Failsafe Recovery** again. You will then see one of the two screens shown immediately below.

When you have restored one type of devices, repeat the process for the other type.

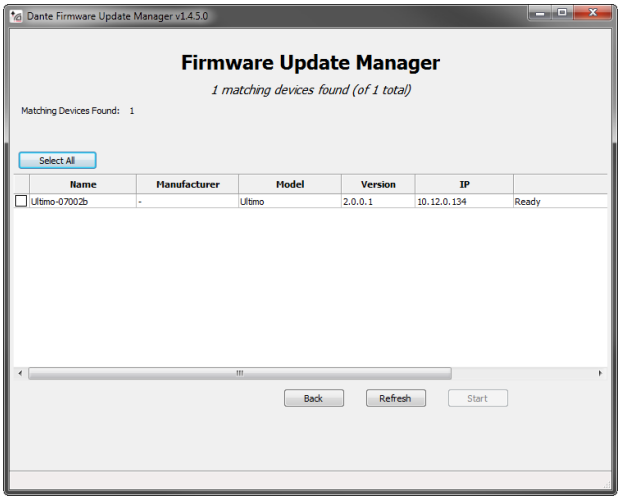


Finding devices for safe recovery...

This screen indicates that Firmware Update Manager has detected Type 1 devices in safe mode, and is scanning the network for the full list. It should take less than a minute to find all applicable devices.

When you are sure that all your safe mode devices have been found, click **Stop Scan,** and go to step 3 below.

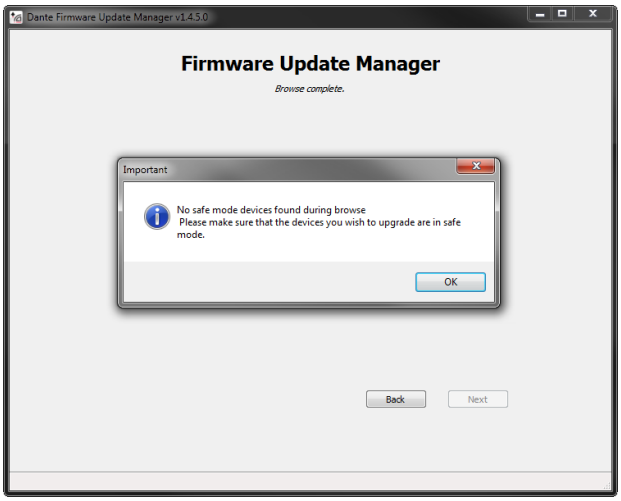
Some older Dante-MY16-AUD and DLM devices may not appear in the failsafe recovery device list. If you have either of these devices in failsafe and they are not appearing in the failsafe device list, see the note regarding 'Expanded Search' below.



Matching Devices Found

This screen means that Firmware Update Manager has detected Type 2 devices in safe mode.

Type 2 devices can be restored using the standard firmware update procedure, as described in Section 7.2 - *Basic Steps* (step 7 onwards).



No safe mode devices found

This popup indicates that Firmware Update Manager has not detected any devices in safe mode on the network.

Check to ensure that your safe mode device/s are connected to the same network as Firmware Update Manager.

If you are sure that a device is in safe mode, but Firmware Update Manager cannot find it, contact your device manufacturer.

6. Select the devices that you wish to recover, and click **Start**.

   A pop-up is displayed confirming that you wish to proceed.

7. Click **OK** to start the recovery.

   Firmware Update Manager will display 'Processing Safe Recovery', and then 'Safe recovery Done' when the device/s are recovered.

   The Dante module will reboot automatically.

Note: You will need to power cycle the host device (e.g. the mixing console containing the Dante module) after the Dante module automatically reboots.

8. Apply the appropriate firmware update from your device manufacturer, to bring the module firmware back up to the latest version.

Expanded Search
Older Dante-MY16-AUD and DLM devices may not appear in the failsafe device list. To see these devices, click the 'Expanded Search' checkbox. The Expanded Search option may also display devices that are not actually in failsafe. Dante-MY16-AUD devices have MAC addresses beginning 00:1d:c1:03. DLM devices have MAC addresses beginning 00:1d:c1:01. When the relevant device/s appear in the list, follow the above procedure from step 6.

10. Troubleshooting

10.1. Failed to initiate/start TFTP process/server

The Firmware Update Manager starts a TFTP server prior to updating a device's firmware.

If you see the following error message when using Firmware Update Manager:

'Failed to initiate TFTP process' (Mac OS X) or **'Failed to start TFTP server'** (Windows)

This is because a TFTP server is already running, which must be stopped before the device update can progress.

10.2. Updating a device that is running the wrong firmware

If your Dante device is running the wrong firmware (for instance, if it has been updated with firmware for a different manufacturer) it is possible to 'force' an update file onto the device, using the 'Override Device Matching' option on the 'Select Firmware Update File' screen (shown below).

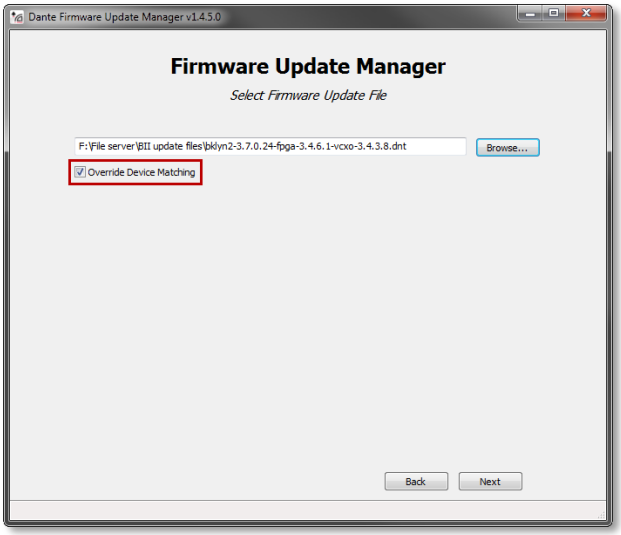


Figure 6 - Override Device Matching option

With this option selected, Firmware Update Manager will apply the selected update file to the device, even if the device manufacturer and model IDs in the update file do not match the manufacturer and model IDs on the device. This can be used to 'reset' your device with the correct manufacturer's firmware.

Firmware Update Manager will display a warning when this option is selected.

If the update file can be used to update multiple device models, you will be prompted to select which model type to update.

Warning: Only use this option if you have been instructed to do so by your equipment manufacturer or by Audinate Technical Support. Applying firmware for the wrong manufacturer or model to your device can lead to functionality problems.